

### Abstract of the Disclosure

A process for generating a curved surface on a workpiece with high speed is disclosed, in which an acceleration of a slider is set to a predetermined desired acceleration while a rotating velocity of a work spindle is made varied to keep the acceleration of the slider as constant as possible. Rotation of the work spindle and movement of an X-axis table are made synchronized with the movement of the slider having the desired acceleration to generate a preselected desired curve on a surface of the workpiece, which lies in perpendicular to a Y-axis along which a cutting tool moves in and out, thereby shortening the cycle time it takes for the curve generation on the workpiece.